

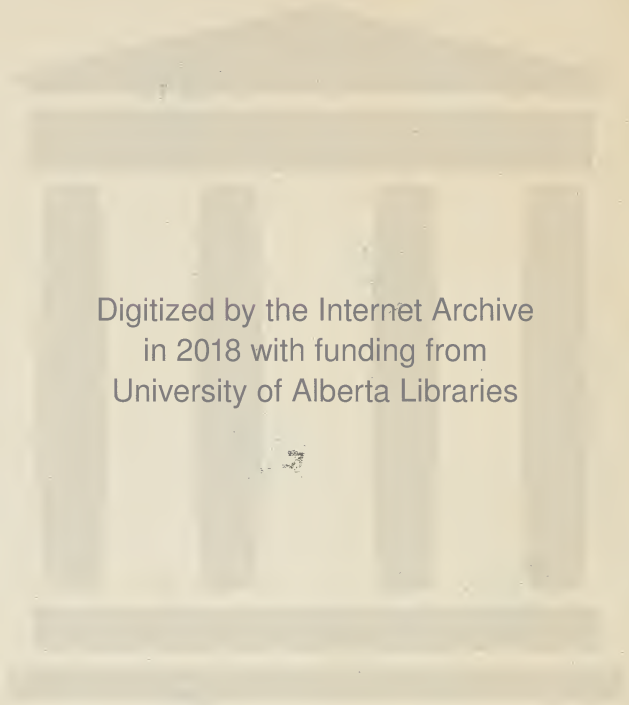


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Published by Science for Peace

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NAPALM



What is Napalm?

How Napalm is Used

The Casualties Napalm Creates

The Extent of Napalm Bombing

Our Responsibility



"Two opposing laws seem to me now in contest. The one a law of blood and death, opening out each day new modes of destruction, forces nations to be always ready for battle. The other, a law of peace, work and health, whose only aim is to deliver Man from the calamities that beset him . . . Which of these two laws will prevail, God alone knows. But of this we may be sure, that science, in obeying the laws of humanity, will always labour to enlarge the frontiers of life."

LOUIS PASTEUR, 1888.

Foreword

by *HORACE JOULES, M.D., F.R.C.P.*

This country is spending just over £400,000,000 yearly on its health service and more is needed. A centre for the treatment of burns in children is projected in each region, and held up for lack of money. We are told this lack is due to the expenditure on armaments, where the supply of money exceeds the capacity to spend it.

The most hideous suffering in our hospitals today is experienced by those extensively burned. This suffering is being deliberately inflicted on defenceless civilians in our name, as we read in the following pages. Science has enabled this to be done economically and with fiendish efficiency. Because of the insensate cruelty involved most of us refuse to think of these facts. We must face our responsibility. If we do this we cannot fail to do all in our power to abolish war as an instrument for settling international problems.

The facts revealed here should be known to all. The press and wireless have failed to inform us, although the material must be in their files. Does a feeling of guilt prevent publication? It is unlikely to help us avert the consequences of our actions.



A black cloud of burning jellied petrol gushes upwards and outwards enveloping a Korean homestead. The entire front of the building is blown out by its fierce heat. This is Napalm. Its victims are instantaneously charred to death or blinded and burnt for life.

What is Napalm?

Among the destructive agents used in war are missiles, explosives, poisons, bacteria and fire. The last two have the overriding advantage that under suitable conditions they are self-perpetuating. The vast areas of London and other cities still derelict ten years after the incendiary raids bear witness to this power of fire. The conflagrations were started by the localised intense heat of burning magnesium. The chance of such an incendiary bomb starting a fire depends, however, upon it falling on or within a few feet of inflammable material.

It is obvious that more certain results could be achieved by increasing the effective area, and the use of oil and petrol bombs in the last war was an attempt in this direction. On violent impact, however, the incendiary material was liable to be spread too thinly and these bombs were comparatively ineffective. Burning took place too rapidly and only very inflammable materials were ignited. American scientists have since solved the problem of the too rapid dissipation of petrol. Their answer is to make the petrol sticky. They convert it into a sticky emulsion, "napalm," which is rather more fluid than a starch paste. The method employed is a secret, but it probably is achieved by adding a small amount of an emulsifier to the petrol with a little water. The burst of a napalm bomb produces a black cloud of burning petrol which expands to a diameter of 50 to 100 yards (depending on the amount of jellied petrol) engulfing and penetrating buildings. A sticky mass of jellied petrol, compared with an incendiary magnesium bomb, pound for pound, spreads fire over many times the area; yet the petrol mass is sufficiently localised to create, in the few seconds it burns, temperatures sufficiently high to soften steel. It is reported to produce temperatures of over a thousand degrees Centigrade.

Napalm is thus not merely a minor advance in the use of fire as an agent of war; it represents an enormous increase in the ability to start fires, and almost instantaneously to sear and char organic material, whether that be vegetable, animal, or human.

How Napalm is Used

Public attention has been directed to napalm, not by virtue of the ingenuity of the scientists who conceived the idea of making petrol sticky, but by the press accounts of the results of American

napalm bombing in Korea. This use is described in the following paragraphs.

Napalm lends itself to use both on a localised scale, and on a large scale covering great areas. It is highly effective in the field against supplies and against troops in foxholes. Troops in deeper bunkers are apparently less effectively attacked by napalm than by high explosive. As an example of small scale use, on a single village, the *Manchester Guardian* of May 15, 1952, quotes a special correspondent of the *New York Times* :—

“A napalm raid hit the village three or four days ago when the Chinese were holding up the advance, and nowhere in the village have they buried the dead because there is nobody left to do so . . . The inhabitants throughout the village and in the fields were caught and killed and kept the exact postures that they had held when the napalm struck—a man about to get on his bicycle, fifty boys and girls playing in an orphanage, a housewife strangely unmarked, holding in her hand a page torn from a Sears-Roebuck catalogue.”

The consequence, close to the centre of the burst, is thus almost instantaneous death by incineration of every man, woman, and child. The cumulative effect of such treatment, village after village, must be considered if the character of napalm bombing is to be appreciated. Mr. René Cutforth, the B.B.C. correspondent in Korea, summarises the overall effect in his book “Korean Reporter” :

“I thought of the hundreds of villages reduced to ashes which I personally had seen, and realised the sort of casualty-list which must be mounting up along the Korean front.”

One other point deserves mention, although detailed information is not available. It seems from a number of press reports (for instance, the *Manchester Guardian*, March 10, 1952) that one village may be wiped out, not by an attack of several bombs, or several planes, but by one single bomb alone. This was true previously of only the largest calibre explosive bombs, such as ordinarily would not be used in a “tactical” manner. The napalm bomb is therefore not only more efficient in its incendiary capacity, or for the indiscriminate slaughter of human beings, but extends the amount of destruction of property and person that may result from the release of a single bomb.

But napalm is not merely a small tactical weapon of immense power of destruction; it is also adapted to larger scale “strategic” purposes. An instance of this is given by the American bombing of a “centre”

on March 11, 1952. On this occasion, according to *The Times*, 33,000 gallons of napalm were dropped on an area of four square miles. Naturally this would not be evenly spread, and from the information published it is not possible to calculate the area that could be burned out. Nevertheless, the fact that such a volume of napalm would completely cover, to a depth of about 1/20th of an inch, an area roughly a hundred yards wide and half a mile long, shows how extensively would be the damage.

The Casualties Napalm Creates . . .

The effect on the human body of being drenched in petrol and then ignited has been demonstrated before the advent of napalm, but never before on such a scale. Instantaneous charring to death is almost inevitable. Details of the medical effects of napalm attack have not been systematically described, but much can be inferred from our existing knowledge of the effect of flame-throwers, large scale fire raids, and petrol burns. Close to the heart of the burst, complete charring occurs, though the immediate cause of death may be asphyxia. Where very large fires are ignited the inrush of air itself causes casualties. But it is self-evident that for every area of total destruction there will be a surrounding area of partial destruction. What happens to persons caught in this fringe, who escape immediate death? A description of one such person is given by the B.B.C. correspondent, René Cutforth:—

“I met the doctor striding impatiently over the snow to meet me. He grabbed my arm.

“Look, we must have some publicity about this. Perhaps the press can make these people wake up to a sense of their responsibilities. Look at this, I want to show you this . . .

“In front of us a curious figure was standing, a little crouched, legs straggled, arms held out from his sides. He had no eyes, and his whole body, nearly all of which was visible through tatters of burnt rags, was covered with a hard black crust speckled with yellow pus. A Korean woman by his side began to speak, and the interpreter said, ‘He has to stand, sir, cannot sit or lie.’ He had to stand because he was no longer covered with a skin, but with a crust like crackling which broke easily.”

Blinded, and a ready prey for bacterial infection on any part of his body surface, such a person cannot hope to live long. But while life lasts it could not be more cruel.

An important characteristic of napalm is that it is sticky. The burns that it causes therefore resemble those due to phosphorus—the burning material cannot be brushed off, and efforts to do so will spread it over other parts of the body. The intense heat also produces superficial burns that are most marked on the face and extremities. One of the commonest types of disfigurement from napalm appears to be the permanent inability to close the eyes, due to scarring and destruction of the eyelids. In children, the hands and back of the neck are likely to suffer since these are exposed to the flash and splash effects in the act of self-protection. Another “case” is described by a correspondent in North Korea. A Korean woman was cooking a meal when a napalm bomb struck near the kitchen door, spraying her. Superficial tissues down to the bone were burned off the face, back, hands and feet, and deep into the flesh of the buttocks. A year later her burns itched and burned continuously. Her face was twisted and slashed, her ears partly destroyed, her hands stiffened with scar tissue. On her back an enormous purple scar one foot long by nine inches wide was raised almost a quarter of an inch above the surrounding flesh.

These effects of napalm burns differ from those of other deep and extensive burns in one respect. They have an unusual tendency to produce keloids. These are thickened areas of the scar tissue, which apart from being unsightly produce contractures with reduced function of the part. Moreover they tend to recur if they are removed surgically. Keloid formation involves a particularly hideous development in burns that are already extensive and deep. From such descriptions the typical result of a slight exposure to napalm can be reconstructed as follows. The subject is hairless, due to loss of scalp. His face is a uniform scar, with running and infected eyes which he can never close. He is probably blind. His hands, if exposed, are reduced to contracted claws. Ears, nostrils, lips and fingertips are likely to have been lost. Painful scars will also occur on any part of the body reached by the burning material. In the next twenty years there will be some thousands of permanent cripples bearing these marks throughout Korea.

The Extent of Napalm Bombing . . .

Even a cursory examination of press reports reveals that under the conditions of warfare in Korea, napalm is causing immense and lasting suffering. Napalm is particularly prone to produce indis-

criminate damage to property and persons owing to the characteristic spraying and spreading qualities. One cannot avoid the conclusion that under conditions where the majority of inhabitants of villages are women and children these rather than men are likely to be the chief sufferers. This appears ominously true in the *New York Times* report already quoted on page (8). No mention is made of any army personnel being involved in the destruction of the village.

In the Korean war, the chief characteristic of which is indiscriminate destruction, napalm is being used on a large scale. This is clearly apparent in the writing of Reginald Thompson, *Daily Telegraph* correspondent in Korea :—

“Slowly, day by day, the tragedy unfolded as death and destruction inexorably consumed Korea and its people . . . The shots of the doomed came from the rice paddies and the shattered ruins of the few concrete buildings, and brought down upon themselves and all the inhabitants the appalling horror of jellied petrol bombs and the devastation of rockets and heavy artillery.

Slowly the American troops advanced through the smoking rubble, pausing until the opposition was crushed under the air strikes and the bombardment. Civilians died in hundreds, and presently in thousands, and the enemy, mostly unrecognisable and ununiformed, was rounded up and stripped.”

—(“*Cry Korea*,” p. 39)*

“It is inescapable that the terrible fate of the South Korean capital and many villages is the outcome of a new technique of machine warfare.

The slightest resistance brought down a deluge of destruction, blotting out the area. Dive bombers, tanks and artillery blasted strong points, large and small, in town and hamlet, while the troops waited at the roadside as spectators until the way was clear for them. Few people can have suffered so terrible a liberation.”—(*ibid.*, p. 94).

“I have described this in some detail because it was typical of the whole advance and the whole method. Every enemy shot released a deluge of destruction. Every village and township in the path of war was blotted out. Civilians died in the rubble and ashes of their homes. Soldiers usually escaped.”

—(*ibid.*, p. 143).

**Cry Korea* by Reginald Thompson. Macdonald (London, 1952).

It is in the light of such accounts that one glimpses the meaning behind the facts reported by Mr. Kingsley, United Nations Agent-General for Reconstruction. According to the *Manchester Guardian*, August 17, 1951, Mr. Kingsley stated that in North Korea alone one million had died, roughly one-ninth of the population. The destruction of property in both north and south has been enormous. In Seoul, to mention only one city, 85 per cent. of the industry has been destroyed, and 60 per cent. of all living space. The indiscriminate massacre of civilians by any means is a violation of the accepted usages of war, and of international law. This was confirmed by the trials of the Nazi war criminals. In 1948 the XVII conference of the International Red Cross adopted a resolution of its legal committee favouring action to forbid the use, among other things, of "arms which cannot be aimed with precision, or which devastate large areas indiscriminately."

Our Responsibility

The barbarity of modern war, of which napalm is only one example, raises an issue which we must all face. This issue confronts both the citizen, who may be ordered to use such weapons, and the scientist who may be expected to develop them.

Many responsible scientists have expressed the view that the problem of world order can be solved by placing the control of weapons of destruction in the hands of such bodies as the United Nations, thereby ensuring that they should be used only in "police actions" designed to defend world order, and presumably conducted with the same regard for the innocent as is displayed by normal law-enforcing agencies. This hope has been rudely shattered by events. We now witness a reputedly law-enforcing agency, dedicated by its charter to the defence of human rights, employing methods at least as barbarous and indiscriminate as those used in any previous, national war, and persistently doing so despite widespread protest from many sections of public opinion.

The revelation of the means of "collective security" in action must profoundly modify our thinking about the whole problem of war, and quicken our sense of responsibility for ensuring the maintenance of civilised behaviour. Science has already, within this generation, been brought face to face with the need to reaffirm its ethical sanction, by the systematic abuse of its techniques by Nazi Germany for political ends. The use of science in war presents a

closely parallel case. Those of us who expressed contempt for German scientists for failing to withdraw from Nazi-sponsored projects, and applauded their punishment, bear an equal responsibility in the face of such issues as the military use of atomic energy, bacteriological and chemical warfare, and the development of weapons of mass destruction such as napalm.

The organisation of "Science for Peace" was formed to direct the attention of scientists to these issues. Scientists are faced with the danger of being regarded by the public as agents of destruction and their silence and indecision in the face of grave issues raised by the present events would lend countenance to such a view.

The public conscience has already been aroused over napalm. On July 3, 1952, the Archbishop of York publicly appealed to the Churches to call for the international prohibition of the napalm bomb "which causes exceptionally horrible and indiscriminate suffering." In a letter to *The Times* on July 8, 1952, a widely representative group, including Lord Boyd-Orr, Earl Russell, Professor F. G. Gregory and Professor W. C. W. Nixon called for an organised protest to the United Nations. "More serious than the barbarity of the weapon," they said, "is the abundant evidence from non-communist sources that it (napalm) has been and is being indiscriminately used against inhabited places with appalling results . . . We do not accept the argument that because a Power has been declared an aggressor its civilian subjects thereby become legitimate targets for unrestricted warfare." Such statements express the widespread disquiet felt by the public, and not the least by scientists, whose responsibility is in many ways the most direct.

Napalm is a product of deliberate research; it has no peaceful application and no theoretical interest. Its only purpose is the annihilation of human beings and the destruction of property. It is being employed in Korea in our name, and it is an unavoidable issue of conscience whether we shall condone such a policy, or protest as vigorously as possible in the name of humanity, and the good repute of science.

Everyone should know these facts about Napalm bombing. You can help by passing copies of this pamphlet to your friends and acquaintances.

This is a publication of

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PURPOSE To unite scientists in actions directed towards removing the danger of a third world war and ensuring that science can be fully used for constructive purposes.

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